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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/680,184	10/08/2003	Shintaro Takehara	008312-0306279	5404

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EXAMINER	
RIVERO, MINERVA	

ART UNIT	PAPER NUMBER
2627	

DATE MAILED: 10/03/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	10/680,184	TAKEHARA ET AL.
	Examiner	Art Unit
	Minerva Rivero	2627

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08 October 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-11* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4, 7-8 and 11* is/are rejected.

7)☒ Claim(s) *5,6,9 and 10* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *10/08/06* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Allowable Subject Matter

2. Claims 5-6 and 9-10 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

3. Regarding claim 5, no reference alone or in combination discloses the PRML signal processing has even-numbered constraint length, a tap number of the FIR filter is 2N-1, and a value of the nth tap coefficient at a time t is expressed as C (t, n), the focus offset change portion adjusts the focus offset quantity in such a manner that the following expression becomes minimum:

$$C(t, N) - \{C(t, N1) + C(t, N-1)\} / 2$$

4. Regarding claim 6, no reference alone or in combination discloses the PRML signal processing has odd-numbered constraint length, a tap number of the FIR filter is 2N, and a value of the nth tap coefficient at a time t is expressed as C(t, n), the focus offset change portion adjusts the focus offset quantity in such a manner that the following expression becomes a minimum:

$$[\{C\ (N-1) - C\ (N-2)\} + \{C\ (N+1) - C\ (N+2)\}] / 2$$

5. Regarding claim 9, no reference alone or in combination discloses the PRML signal processing has even-numbered constraint length, a tap number of the FIR filter is 2N –1, and a value of the nth tap number at a time t is expressed as C(t, n), the tangent tilt offset change portion adjusts the tangential tilt offset quantity in such a manner that the following expression becomes minimum:

$$\{C(t, N+1) - C(t, N-1)\}.$$

6. Regarding claim 10, no reference alone or in combination discloses the PRML signal processing has odd-numbered constraint length, a tap number of FIR filter is 2N, and a value the nth tap coefficient at a time t is expressed as C (t, n), the tangent tilt offset quantity in such a manner that the following expression becomes minimum:

$$\{C(t, N+2) - C(t, N-2)\}.$$

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

8. Claims 1-2 and 11 are rejected under 35 U.S.C. 102(e) as being anticipated by Ando *et al.* (US 6,671,243), hereinafter Ando.

9. Regarding claims 1 and 11, Ando discloses an optical disk apparatus which decodes data recorded in an optical disk by PRML (Partial Response and Maximum Likelihood) signal processing, comprising:

an optical pickup which irradiates the optical disk with a light beam, receives a reflected light ray therefrom, and provides a reproduction signal corresponding to the reflected light ray (Col. 5, Lines 37-39);

a servo offset setting portion which sets a servo offset of a servo system concerning the optical pickup (*adjusting gain of a current to be supplied to be optical head*, Col. 38, Lines 35-46);

an adaptive equalizer which is controlled by a signal decoded by the PRML signal processing and performs waveform equalization on the reproduction signal provided from the optical pickup (Col. 6, Lines 1-13); and

a servo offset change portion which obtains an optimum point of the servo offset by using a control result of the adaptive equalizer, and changes a set value of the servo offset setting portion (*ideal value calculator*, Col. 6, Lines 14-22).

10. Regarding claim 2, Ando discloses the adaptive equalizer includes an FIR filter, and the servo offset change portion obtains an optimum point of the servo offset by using a tap coefficient of the FIR filter (*10-tap transversal filter*, Col. 2, Lines 50-51).

11. Regarding claim 3, Ando discloses the servo offset setting portion has a focus offset setting portion which sets a focus offset quantity of the light beam (Col. 6, Lines 39-63, see Fig. 9), and

the servo offset change portion has a focus offset change portion which obtains an optimum value of a focus offset by using a control result of the adaptive equalizer and changes a focus offset quantity of the focus offset setting portion (Col. 6, Lines 39-63, see Fig. 9).

Claim Rejections - 35 USC § 103

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

13. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ando in view of Lucky (US 3,617,948).

Regarding claim 4, Ando does not explicitly disclose but Lucky does disclose a high-frequency component detection portion which detects an amplitude value concerning a high-frequency component of the adaptive equalizer, wherein the focus offset change portion obtains an optimum value of the focus offset based on the amplitude value of the high-frequency component detected by the high-frequency component detection portion (Col. 2, Lines 50-54).

Therefore it would have been obvious to one ordinarily skilled in the art at the time of the invention to supplement the teachings of Ando by having a high-frequency component detection portion which detects an amplitude value concerning a high-frequency component of the adaptive equalizer, as disclosed by Lucky in order to equalize the waveform as needed.

14. Claims 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ando, in view of Shim *et al.* (US 6,791,919), hereinafter Shim.

15. Regarding claim 7, Ando does not explicitly disclose but Shim does disclose the servo offset setting portion has a tangential tilt offset setting portion which sets a tilt offset quantity in a tangential direction of the optical disk (Col. 10, Lines 37-40), and

the servo offset change portion has a tangential tilt offset change portion which changes the tangential tilt offset to an optimum value by using a control result of the adaptive equalizer (Col. 10, Lines 37-40).

Therefore it would have been obvious to one ordinarily skilled in the art at the time of the invention to supplement the teachings of Aldo and have the servo offset setting portion have a tangential tilt offset setting portion which sets a tilt offset quantity in a tangential direction of the optical disk, and the servo offset change portion has a tangential tilt offset change portion which changes the tangential tilt offset to an optimum value by using a control result of the adaptive equalizer, as disclosed by Shim, in order to effectively correct an inclination that would otherwise negatively affect the reproduction of the data in the medium.

16. Regarding claim 8, Ando does not disclose but Shim does discloses an asymmetry detection portion which detects an asymmetry of the adaptive equalizer in a direction of a time base, wherein the tangential tilt offset change portion adjusts a

tangential tilt offset quantity in such a manner that the asymmetry detection portion becomes minimum (Col. 10, Lines 37-40).

Therefore it would have been obvious at the time of the invention to supplement the teachings of Ando and have asymmetry detection portion which detects an asymmetry of the adaptive equalizer in a direction of a time base, wherein the tangential tilt offset change portion adjusts a tangential tilt offset quantity in such a manner that the asymmetry detection portion becomes minimum, as disclosed by Shim, in order to effectively compensate for reproduction disturbances.

Conclusion

17. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Taguchi *et al.* (US 5,986,987) disclose a PRML readout system for an optical disk.

Lee *et al.* (US 6,377,529) disclose a method of equalization for the reading of marks an optical media.

Sasaki (US 5,659,527) discloses an optical disk drive with use of sampled preceding focus or tracking error signal in response to detection of spiked noise or offset.

Pozidis *et al.* (US 2004/0156293) disclose an equalization method to correct asymmetry in a writing process of an optical disc.

18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Minerva Rivero whose telephone number is (571) 272-7626. The examiner can normally be reached on Monday-Friday 9:00 am - 6:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wayne Young can be reached on (571) 272-7582. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

9/27/06

WAYNE YOUNG
SUPERVISORY PATENT EXAMINER